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Five Oft-repeated Questions About China's Recent Rise as a Patent Power

Peter K. Yu

Texas A&M University School of Law, peter_yu@msn.com

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FIVE OFT-REPEATED QUESTIONS ABOUT
CHINA'S RECENT RISE AS A PATENT POWER

*Peter K. Yu**

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* Copyright © 2013 Peter K. Yu. Kern Family Chair in Intellectual Property Law and Director, Intellectual Property Law Center, Drake University Law School; Visiting Professor of Law, Faculty of Law, University of Haifa. The Author benefited from discussions with the participants of the “New Developments in Chinese IP Law: Copyright Revisions and Enforcement Challenges” Conference at the Boalt Hall School of Law, University of California at Berkeley, the Distinguished Scholar Speaker Series at the John S. and Marilyn Long U.S.-China Institute for Business and Law at the University of California at Irvine, the Conference on “China’s New Environment for Intellectual Property” at Fordham University School of Law, the *John Marshall Review of Intellectual Property Law* Symposium on “Applications of Intellectual Property Law in China” at John Marshall Law School in Chicago, the *Campbell Law Review* Symposium on “The New Global Convergence: Intellectual Property, Increasing Prosperity, and Economic Networks in the Twenty-First Century” at Norman Adrian Wiggins School of Law, Campbell University, the *University of Detroit Mercy Law Review* Symposium on “The Future of Intellectual Property” at University of Detroit Mercy School of Law, the Intellectual Property Research Institute of Australia Conference on “The Rise of Innovative China: Implications for the Region” at the University of Technology, Sydney and the University of Melbourne, the 2012 IPR Nanhu Forum in Shenzhen, China organized by Zhongnan University of Economics and Law, the Reinhold Cohn Group IP Strategy and Commercialization Annual Seminar in Tel Aviv, Israel, the 2012 Iowa Intellectual Property Law Association Fall Meeting in Bettendorf, Iowa, and lectures at the law faculties of the University of Haifa, the University of Idaho, and City University of Hong Kong. The Author is grateful to Howard Abrams, Olufunmilayo Arewa, Annemarie Bridy, Cao Xinming, Barbara Clark, Mark Cohen, Ilan Cohn, Niva Elkin-Koren, Jack Hsu, Hu Kaizhong, Paul Jensen, Benjamin Liu, Robert Merges, Lucas Osborn, Ken Shao, Seagull Song, and Beth Webster for their kind invitations and hospitality. He would like to thank Erin Cassidy and Lindsey Purdy for excellent research and editorial assistance.

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INTRODUCTION

Since China established its modern intellectual property system in the early 1980s, policymakers, industries, commentators, and the media have widely criticized its failure to adequately protect intellectual property rights holders.¹ From the repeated threats of the United States Trade Representative (USTR) to impose unilateral trade sanctions in the late 1980s and early 1990s,² to China’s need for greater compliance with international intellectual property standards in the run-up to its accession to the World Trade Organization (WTO) in the early 2000s,³ to the ongoing disputes between China and the United States over the former’s failure to adequately protect and enforce intellectual property rights, mainstream media have been filled with clichéd stories about China’s massive piracy and counterfeiting problems.⁴ In a recent report,

¹ China introduced its trademark law in 1982, patent law in 1984, and copyright law in 1990. For the Author’s earlier discussions of the Chinese intellectual property system, see generally Peter K. Yu, *From Pirates to Partners: Protecting Intellectual Property in China in the Twenty-First Century*, 50 AM. U. L. REV. 131 (2000) [hereinafter Yu, *From Pirates to Partners I*]; Peter K. Yu, *From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China*, 55 AM. U. L. REV. 901 (2006) [hereinafter Yu, *From Pirates to Partners II*]; Peter K. Yu, *Intellectual Property, Economic Development, and the China Puzzle*, in INTELLECTUAL PROPERTY, TRADE AND DEVELOPMENT: STRATEGIES TO OPTIMIZE ECONOMIC DEVELOPMENT IN A TRIPS PLUS ERA 173 (Daniel J. Gervais ed., 2007) [hereinafter Yu, *China Puzzle*]; Peter K. Yu, *The Middle Kingdom and the Intellectual Property World*, 13 OR. REV. INT’L L. 209 (2011) [hereinafter Yu, *Middle Kingdom*].

² See Yu, *From Pirates to Partners I*, *supra* note 1, at 140–48 (discussing the United States’ use of unilateral sanctions to pressure China to reform its intellectual property system).

³ On December 11, 2001, China became the 143rd member of the WTO. See generally Symposium, *China and the WTO: Progress, Perils, and Prospects*, 17 COLUM. J. ASIAN L. 1 (2003) (discussing the ramifications of China’s entry into the WTO).

⁴ For discussions of the recent WTO dispute between China and the United States on the protection and enforcement of intellectual property rights, see generally Panel Report, *China—Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, WT/DS362/R (Jan. 26, 2009) [hereinafter WTO Panel Report]; Peter K. Yu, *The TRIPS Enforcement Dispute*, 89 NEB. L. REV. 1046 (2011); Peter K. Yu, *TRIPS Enforcement and*

the United States International Trade Commission (ITC) estimated that “firms in the U.S. IP [intellectual property]–intensive economy that conducted business in China in 2009 reported losses of approximately \$48.2 billion in sales, royalties, or license fees due to IPR [intellectual property rights] infringement in China.”⁵

In recent years, however, the discourse on intellectual property developments in China has slowly begun to change.⁶ Such a change is the most notable in the patent area. Today, China is already among the top five countries filing patent applications through the Patent Cooperation Treaty (PCT).⁷ In 2011, the number of PCT applications increased by 33.4% to 16,406, earning China the fourth spot, behind only the United States, Japan, and Germany.⁸ Among all the applicants, ZTE Corporation (formerly Zhongxing Telecommunication Equipment Corporation) and Huawei Technologies, both Chinese firms, had the largest and third largest number of PCT applications, respectively. By contrast, Panasonic Corporation and Sharp Kabushiki Kaisha, both Japanese firms, had only the second and fourth largest number of PCT applications, respectively. U.S.-based Qualcomm placed the distant sixth.

Earlier that year, the State Intellectual Property Office (SIPO) released a highly ambitious document outlining its National Patent Development Strategy for 2011–2020.⁹ Included in the 2015 targets were the following goals:

The annual quantity of applying for patents for inventions, utility models and designs [in the country] will reach 2 million. China will rank among the top two in the world in terms of the annual number of patents for inventions granted to the domestic applicants, and the quality of patents filed will further improve. The number of owning patents every one million people and the number of overseas patent applications filed by Chinese applicants will double. The proportion of patent applications in industrial enterprises above designated size will reach 8% and the quantity of owning patent rights will

Developing Countries, 26 AM. U. INT’L L. REV. 727 (2011).

⁵ U.S. INT’L TRADE COMM’N, INV. NO. 332-519, USITC PUB. 4226, CHINA: EFFECTS OF INTELLECTUAL PROPERTY INFRINGEMENT AND INDIGENOUS INNOVATION POLICIES ON THE U.S. ECONOMY xiv (2011).

⁶ See Peter K. Yu, *The Rise and Decline of the Intellectual Property Powers*, 34 CAMPBELL L. REV. 525, 529–32 (2012) [hereinafter Yu, *Rise and Decline*] (pointing out that China is at the cusp of crossing over from a pirating nation to a country respectful of intellectual property rights).

⁷ All the figures from this paragraph are taken from Press Release, World Intellectual Prop. Org., International Patent Filings Set New Record in 2011 (Mar. 5, 2012), available at http://www.wipo.int/pressroom/en/articles/2012/article_0001.html.

⁸ The estimated figures for the United States, Japan, and Germany were 48,596, 38,888, and 18,568, respectively. *Id.*

⁹ STATE INTELLECTUAL PROP. OFFICE [SIPO], NATIONAL PATENT DEVELOPMENT STRATEGY (2011–2020) (2011), translated at <http://graphics8.nytimes.com/packages/pdf/business/SIPONatPatentDevStrategy.pdf> [hereinafter NATIONAL PATENT DEVELOPMENT STRATEGY].

significantly rise. . . . The patent transaction services will be established in major cities of China with annual patent transaction amounts reaching 100 billion yuan. . . . The patent examiner[s] will reach 9,000. . . . The talents in the patent service industry will be greater and the professional categories will be more complete, with certified patent agents reaching 10,000.¹⁰

In the past few years, SIPO has also been actively developing professional ties with leading patent offices from around the world. As early as 2007, SIPO officials met with their counterparts from the European Patent Office, the Japanese Patent Office, the Korean Intellectual Property Office, and the United States Patent and Trademark Office (USPTO) to discuss ways to “improv[e] the efficiency of their examination systems and to harmonize their office systems.”¹¹ These so-called “IP5” discussions, which remain ongoing, further strengthen SIPO’s status as “a player in the top tier of patent offices that will dominate the emerging system of global patent administration.”¹²

In view of these major developments in the patent area, it is high time we rethink the accuracy and suitability of the traditional discourse on intellectual property developments in China. To help achieve this feat, this Article focuses on five key questions that I have been repeatedly asked in presentations or conferences exploring recent intellectual property developments in China. As the answers will suggest, the future of the Chinese intellectual property system is rather complex. This future reflects neither a rosy picture of China’s “great leap forward” in the intellectual property arena nor a continuously gloomy picture of pirates and counterfeiters. Instead, the picture is dualistic and highly dynamic. It includes both yin and yang—the yin of continued massive piracy and counterfeiting and the yang of China’s rise as a patent power.

I. QUESTION 1: HOW IS THE QUALITY OF CHINESE PATENTS?

When *The New York Times* interviewed former USPTO director David Kappos about SIPO’s National Patent Development Strategy, he described the 2015 target numbers as “mind-blowing.”¹³ Although SIPO’s strategy provided many different data points, media and commentators thus far have focused considerably on the SIPO’s projection that China’s patent applications will reach two million per

¹⁰ *Id.* at 4–5.

¹¹ PETER DRAHOS, *THE GLOBAL GOVERNANCE OF KNOWLEDGE: PATENT OFFICES AND THEIR CLIENTS* 236 (2010).

¹² *Id.* at 233. Since 1994, the Chinese Patent Office, and later SIPO, has served as an international searching authority for PCT purposes. *Id.*

¹³ Steve Lohr, *When Innovation, Too, Is Made in China*, N.Y. TIMES, Jan. 2, 2011, at BU3.

year.¹⁴ This focus is understandable: if that target is reached, SIPO will handle a total of at least *ten million* patent applications during 2015–2020!

Taking note of this gigantic number, one cannot help but wonder if SIPO's forecast is accurate and realistic. One may further query whether the highly ambitious goals set by the National Patent Development Strategy, if met, will result in a quick deterioration of the overall quality of Chinese patents.¹⁵ For example, policymakers, commentators, and practitioners expressed concern over the perverse incentives created by the Chinese government's subsidies for patenting activities, which they claimed would distort the total number of domestic applications.¹⁶ Likewise, Mark Liang questioned SIPO's ability to thoroughly examine these patents and by extension the quality of Chinese patents:

[T]here is reason to doubt whether the quality of the patents being applied for and granted in China. The burst in Chinese patenting activity is a product in large part from the Central Government's "innovation agenda,"—a leading component of which are generous

¹⁴ See, e.g., *id.*; DAN PRUD'HOMME, DULLING THE CUTTING-EDGE: HOW PATENT-RELATED POLICIES AND PRACTICES HAMPER INNOVATION IN CHINA 6 (2012), available at <http://www.europeanchamber.com.cn/upload/media/media/27/patentstudy2012%5B766%5D.pdf>.

¹⁵ Cf. ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 12 (2004) ("[T]he rapid increase in the rate of patenting has been accompanied by a proliferation of patent awards of dubious merit.").

¹⁶ As noted in a Reuters article:

[L]egal experts said China would need to do more before it can lead the world in innovation as the quality of patents needed to improve.

The government provided attractive incentives for companies in China to file patent applications, regardless of whether a patent was eventually granted, they said.

"The idea of subsidizing patents is not bad in itself, however it is a blunt instrument because you get high figures for filings, but it does not tell you anything about the quality of the patents filed," said Elliot Papageorgiou, a Partner and Executive at law firm Rouse Legal (China).

"One thing is volume, quality is quite another. The return, or the percentage of grants, of the patents is still not as high in China as, say, in the U.S., Japan or some places in Europe," he said.

Lee Chyen Yee, *China Tops U.S., Japan to Become Top Patent Filer*, REUTERS, Dec. 21, 2011, <http://www.reuters.com/article/2011/12/21/us-china-patents-idUSTRE7BK0LQ20111221>. An article in *The Economist* concurred:

[T]here are reasons for scepticism. The bureaucrats in Chinese patent offices are paid more if they approve more patents, say local lawyers. That must tempt them to say yes to ideas of dubious originality. And the generosity of China's incentives for patent-filing may make it worthwhile for companies and individuals to patent even worthless ideas. "Patents are easy to file," says Tony Chen, a patent attorney with Jones Day in Shanghai, "but gems are hard to find in a mountain of junk."

A cottage industry has sprung up to produce patents of suspect value. On Taobao, the Chinese eBay, patent writers and filers advertise their services for as little as 700 yuan for individuals or 2,000 yuan for corporations. Most of these patents are probably filed with the expectation that they will be ignored.

Innovation in China: Patents, Yes; Ideas, Maybe, ECONOMIST, Oct. 16, 2010, at 78.

incentives for patent filings. For example, Chinese companies who file above a certain number of patents receive significant tax breaks. Tenure is more likely for university professors who are able to obtain patents. Patent application fees for qualifying individuals and companies are entirely subsidized by local governments. These incentives, among others, are all part and parcel of the agenda's stated goal of 2 million patent filings (of any type) by 2015, making China's SIPO far and away the world's busiest patent office.¹⁷

Most recently, Dan Prud'homme, the business manager of the IPR Working Group and R&D Forum at the European Union Chamber of Commerce in China, published a highly critical report documenting the myriad problems confronting the Chinese patent system.¹⁸ Focusing again on patent quality, the report declared:

While patents are exploding in China and certain innovation is also on the rise, patent quality has not proportionately kept up and in fact the overall strength of China's actual innovation appears overhyped. Statistical analysis in this study not only reveals concerning trends in the quality of China's patents at present, but suggests that while patent filings in China will likely continue to notably grow in the future, patent quality may continue to lag these numbers. In fact, projections in this study indicate there might be over 2.6 million less-than-"highest-quality" patents filed in China in 2015 alone, which is substantially more than estimated "highest-quality" patents filings in that year. With this in mind, and objectively considering its performance on additional innovation metrics, it is clear that China's innovation ecosystem deserves a new type of scrutiny.¹⁹

The report further discussed "how a network of patent-related policies, other measures, and practices in China collectively hamper both patent quality and innovation at large."²⁰ It ended with the conclusion that "overall, China still lags behind many developed countries in terms of innovation at large and quality patents in particular, let alone breakthrough innovation and highest-quality patents."²¹

While criticisms directed at the Chinese patent system are not unfounded, it is important to think about whether an overly heavy focus on patent metrics or targets would lead one to miss the forest for the trees. To begin with, the two million figure collectively covers three different types of patents: invention patents, utility model patents, and design patents. While invention patents are granted only after careful

¹⁷ Mark Liang, *Chinese Patent Quality: Running the Numbers and Possible Remedies*, 11 J. MARSHALL REV. INTELL. PROP. L. 478, 482 (2012) (footnotes omitted).

¹⁸ PRUD'HOMME, *supra* note 14.

¹⁹ *Id.* at 1 (emphasis omitted).

²⁰ *Id.* These policies, measures and practices include "government-set patent targets and indicators . . . ; policies and other measures meant to promote patents . . . ; and rules and procedures for reviewing patent applications and those for enforcing patents." *Id.*

²¹ *Id.* at 19.

substantive examinations by patent agents, utility models and designs are granted without any substantive examination.²² Similar to innovation patents in Australia, *Gebrauchsmuster* in Germany, short-term patents in Hong Kong, utility models in Japan or South Korea, or petty patents in Indonesia or Thailand,²³ the utility model patent in China “was set up to invite broader participation in inventive enterprises, especially by smaller collective enterprises and private citizens who are less likely to have resources devoted to invention patents.”²⁴ As a result, the inventiveness required for utility model applications is much lower than that required for invention patent applications.²⁵

Thus, if accurate comparisons are to be made between China and other countries—say, the United States—it is important to focus on invention patents alone—or, even better, patents for *domestic* inventions alone.²⁶ In 2011, for example, the total number of applications for and grants of patents for domestic inventions in China were 415,829 and

²² See Patent Law of the People’s Republic of China art. 39–40 (promulgated by the Standing Comm. Nat’l People’s Cong., Mar. 12, 1984, amended Dec. 27, 2008, effective Oct. 1, 2009) (China), translated at http://www.sipo.gov.cn/sipo_English/laws/lawsregulations/200804/t20080416_380327.html (requiring substantive examination for invention patents, but only preliminary examination for utility model and design patents).

²³ See Uma Suthersanen, *Utility Models and Innovation in Developing Countries* 40–42 (UNCTAD-ICTSD Project on IPRs and Sustainable Development Series, Issue Paper No. 13, 2006); see also *id.* at 1 (“There are currently approximately 75 countries which provide, in some form or another, utility model protection. . . . [M]ajor industrial nations which have adopted the utility model regime include Japan, South Korea and Germany.”); Peter K. Yu, *Intellectual Property and Asian Values*, 16 MARQ. INTELL. PROP. L. REV. 329, 389–90 (2012) (noting the importance of utility models and other alternative innovation models to developing countries). For discussions of utility models, see generally INNOVATION WITHOUT PATENTS: HARNESSING THE CREATIVE SPIRIT IN A DIVERSE WORLD (Uma Suthersanen, Graham Dutfield & Kit Boey Chow eds., 2007); Henning Grosse Ruse-Khan, *The International Legal Framework for the Protection of Utility Models*, 4 WIPO J. (forthcoming 2013); Mark D. Janis, *Second Tier Patent Protection*, 40 HARV. INT’L L.J. 151 (1999); Suthersanen, *supra*.

²⁴ PETER FENG, *INTELLECTUAL PROPERTY IN CHINA* 170 (2d ed. 2003).

²⁵ As Dan Prud’homme wrote:

[O]n one hand, given their higher invalidation rates and higher risk of being filed solely for and used in “malicious prosecution actions,” utility models are considered of lower quality than invention patents. On the other hand, it is important to recognise that a variety of evidence debunks the idea that utility model patents are always of low value, whereas a range of empirical studies show that the utility model system in certain countries successfully enables movement from relatively low levels of innovation and competitiveness, and poor diffusion of technology, to higher levels.

PRUD’HOMME, *supra* note 14, at 3.

²⁶ Similarly, Mark Liang observed:

[I]n assessing the inventive prowess of the two countries, the relevant figure should be the number of indigenous patent filings. Foreign filings say nothing about each country’s inventiveness and should therefore be excluded. In sum, a proper comparison is the number of Chinese-origin invention applications filed at the SIPO versus the number of U.S.-origin utility applications at the PTO.

Liang, *supra* note 17, at 490 (footnote omitted).

112,347, respectively.²⁷ Those figures already exceeded the corresponding figures in the United States, which amounted to only 247,750 and 108,626, respectively.²⁸

Although one could argue that the quality of invention patents in China compares less favorably with that of the United States, it is important not to lose sight of the fact that the number of patent applications for domestic inventions in China can only increase—and, in my view, increase rapidly. At some point, that number would be so enormous that quantity would present a much bigger problem than quality. As Mark Cohen, the former senior intellectual property attaché at the U.S. Embassy in Beijing, pointed out in an interview: “[S]ometimes quantity is quality in patents, at least in terms of litigation. Having a thicket of patents that one can assert can be very meaningful in driving a license or a settlement.”²⁹ If the so-called “national champions” in China,³⁰ such as ZTE Corporation and Huawei Technologies, are able to acquire a large number of patents, they likely will have a significant advantage over foreign firms having a much smaller number.

Second, when one takes into consideration the total number of current patent applications in China, the two million figure is not as unrealistic as it sounds. According to the official statistics, the total number of patent applications in 2011 already reached 1,633,347.³¹ That number represented a growth rate of about 34%, up from 1,222,286 in 2010. Out of these applications, 526,412 were for invention patents, 409,836 for utility models, and 421,273 for designs. If the projected growth rate for all patents combined is a meager 5.2%, China will have reached two million patent applications by 2015. With a growth rate of about 34% in 2011, it is hard to imagine how that rate could drastically slow down to less than 5.2% even if one assumes that the global economic crisis has significantly slowed down patent applications in

²⁷ SIPO, *Table 1 Distribution of Applications for Inventions Received from Home and Abroad*, http://english.sipo.gov.cn/statistics/2011/12/201201/t20120116_641774.html (Jan. 16, 2012); SIPO, *Table 4 Distribution of Grants for Inventions Received from Home and Abroad*, http://english.sipo.gov.cn/statistics/2011/12/201201/t20120116_641766.html (Jan. 16, 2012).

²⁸ U.S. Patent & Trademark Office, *U.S. Patent Statistics Chart: Calendar Years 1963–2011*, http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm (last modified May 21, 2012).

²⁹ Whitney Stenger, *Mark Cohen: Global Intellectual Property Ambassador*, 15 SMU SCI. & TECH. L. REV. 41, 45 (2011).

³⁰ See ODED SHENKAR, *COPYCATS: HOW SMART COMPANIES USE IMITATION TO GAIN A STRATEGIC EDGE* 158 (2010) (noting “the government’s strategy of consolidating strategic industries . . . to create national champions that can hold their own in global markets and . . . to restore its imperial glory”); TOM DOCTOROFF, *WHAT CHINESE WANT: CULTURE, COMMUNISM AND THE MODERN CHINESE CONSUMER* 15–16 (2012) (discussing China’s mobilization of resources for critical strategic undertakings at the national level).

³¹ All the figures in this paragraph are taken from SIPO, *Comparative Table 1 Contemporary Quantity Comparison of Three Kinds of Patents Received from Home and Abroad Between 2010 and 2011*, http://english.sipo.gov.cn/statistics/2011/12/201201/t20120116_641768.html (Jan. 16, 2012).

China.

Third, while it is fair to question the quality of Chinese patents, it is more insightful to compare the *actual* patent quality across countries, as opposed to making comparisons based on *idealistic* standards.³² In the United States, for example, the low quality of patents granted by the USPTO had led to repeated calls for patent reform.³³ These reform demands eventually led to the recent adoption of the Leahy-Smith America Invents Act³⁴ and a complete overhaul of the U.S. patent system. More than a decade ago before the adoption of this statute, commentators and practitioners alike began vocally criticizing the low quality of U.S. patents, which they attributed to “budgetary limitations, an exploding filing rate, and the increasing range of patentable subject matter.”³⁵ In a widely cited study, John Allison and Mark Lemley showed shockingly that U.S. courts had found the patent invalid in 46% of the 300 final validity decisions examined.³⁶ Recently, Carlos Correa also observed:

In the US . . . , patent owner’s likelihood of success in patent validity challenges is only 51 per cent if the trial is heard before a judge alone. If the trial is heard before a judge and jury: 68 per cent. Overall chances of success for the patent owner if the trial is held in Massachusetts and Northern California, respectively: 30 per cent, 68 per cent.³⁷

If these observations indeed reflect the actual quality of U.S. patents, one has to wonder whether the concern over the quality of Chinese patents is significantly different from the criticism of low patent quality in other parts of the world.

Fourth, evaluating patent quality is inherently difficult. As Dan Prud’homme reminded us:

There has long been a debate on what exactly a definition of “patent quality” should entail. One conventional definition is that patent

³² Cf. Peter K. Yu, *Enforcement, Economics and Estimates*, 2 WIPO J. 1, 13 (2010) (questioning whether researchers should “measure the countries against an idealised yardstick of effective intellectual property protection and enforcement” when they make cross-country comparisons of piracy and counterfeiting).

³³ For discussions of problems within the U.S. patent system, see generally U.S. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY (2003); JAFFE & LERNER, *supra* note 15; A PATENT SYSTEM FOR THE 21ST CENTURY (Stephen A. Merrill, Richard C. Levin & Mark B. Myers eds., 2004).

³⁴ Pub. L. No. 112-29, 125 Stat. 284 (2011).

³⁵ John R. Thomas, *The Responsibility of the Rulemaker: Comparative Approaches to Patent Administration Reform*, 17 BERKELEY TECH. L.J. 727, 728 (2002).

³⁶ John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998).

³⁷ Carlos M. Correa, *The Push for Stronger Enforcement Rules: Implications for Developing Countries*, in INT’L CTR. FOR TRADE & SUSTAINABLE DEV., ISSUE PAPER NO. 22, THE GLOBAL DEBATE ON THE ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS AND DEVELOPING COUNTRIES 27, 67 n.84 (2009).

quality is determined by legal compliance with core statutory requirements for patentability. Others look at the commercial value of a patent, and in the same vein look at patents that are maintained over an extended amount of time such that they can be commercialised to make profits. Yet others suggest that patents that are not commercially valuable can still be of good quality according to statutory criteria. Some use frequency of patent citations in patent literature and also sometimes in non-patent literature as a gauge of the significance of a patent and thus its quality. Some define quality in relative terms, whereas higher quality patents exclusively refer to inventions that would not have been made without the incentive afforded by their patent protection. Yet others, particularly observers of China's patent system, appear to only consider invention patents as of good quality, whereas all non-invention patents (or utility models in particular), are "junk" (low quality). Yet other definitions may be used.³⁸

Focusing on the specific Chinese context, Mark Cohen further declared:

It is . . . very hard to benchmark the quality of individual patents. By China's own data, quality is improving. By certain patent quality surrogate data—such as the number of service versus non-service inventions, patents that are commercialized, field of use, whether patents are maintained throughout their useful life, type of patents (invention patent versus utility model or designs)—there are more and more patent grants that have commercial viability. However, there are no citation rates. So in other words, it cannot be determined if a particular patent has been cited by subsequent patents. That would be a very important, perhaps the most important, indicator of patent quality. Whether patents are filed internationally through the Patent Cooperation Treaty (PCT) or through national phase filings would be another important indicator, as international filings are generally reserved for higher quality patents due to their cost and international significance.

Field of use is especially critical. It is very hard to analyze bulk patent data, because one patent in the bio-tech or pharmaceutical (pharma) sector can be significantly more valuable than five hundred in the IT sector. There have not been many blockbuster pharma products coming out of China, so one cannot really equate 10,000 patents in China's IT sector to 10,000 patents in the pharma sector. Perhaps the most significant new medicines have in fact been based on traditional Chinese medicine, like Artemisinin and Tamiflu. On the other hand, there used to be many patents related to food products, fermentation, and the like in China that probably had very limited commercial use. There has also been a closer alignment between what China manufacturers are producing in the IT sector

³⁸ PRUD'HOMME, *supra* note 14, at 22 (footnotes omitted).

and what Chinese inventors are patenting. This is a positive sign.³⁹

Finally, the important point about China's recent developments in the patent area is not so much about how many patent applications SIPO will receive by 2015 or how many patents the office will eventually grant. Rather, it is about how China's patent system has quickly turned around in fewer than thirty years. From the "four patents and six inventor certificates" granted between 1950 and 1963,⁴⁰ to a world record-breaking 3,455 applications filed on April 1, 1985 (the first day the Patent Law went into effect),⁴¹ to the two million patent applications SIPO now projects for 2015, the Chinese patent system has indeed come a very long way.

In fact, this system has arguably accomplished what no other patent system in the world has ever achieved—be it the system in Germany, Japan, or the United States. Thus, as much as mainstream media are content with perpetuating the decades-old discussion of massive piracy and counterfeiting in China, and as much as industries continue to demand tighter measures to enforce intellectual property rights, one has to wonder whether these two groups have missed some very important recent developments concerning the Chinese patent system. Today, China already has the world's largest volume of domestic patent applications. It is only a matter of time before China overtakes the United States, Japan, and Germany to become the world's leader in filing international patent applications.

II. QUESTION 2: WHAT DO CHINESE POLICYMAKERS HAVE IN MIND WHEN THEY MENTION "INDEPENDENT INTELLECTUAL PROPERTY"?

Although highly ambitious, SIPO's National Patent Development Strategy does not represent an isolated effort undertaken by an individual government agency. Instead, it was "formulated for the purpose of thoroughly implementing the Outline of the National

³⁹ Stenger, *supra* note 22, at 45–46. Mark Liang concurred:

Patent quality is inherently difficult to quantify using numeric metrics. Assessing the objective "value" of a patent or the inventiveness of a patent is an imprecise science that presents a number of normative and positive issues. Measuring the quality of the patent examination process also presents a number of challenges—what measures may be used to assess efficiency, thoroughness, and accuracy?

Even assuming that the quality of patents or their examination can be measured using some number or score, there remains the issue of how to calculate the score. What variables and formulas should the calculation use? The challenge is all the more daunting with China and the SIPO, given the relative lack of transparency and available data.

Liang, *supra* note 17, at 491–92 (footnote omitted).

⁴⁰ PETER GANEA & THOMAS PATTLOCH, *INTELLECTUAL PROPERTY LAW IN CHINA* 3 (2005).

⁴¹ FENG, *supra* note 24, at 168.

Intellectual Property Strategy.”⁴² Released in June 2008, this Outline laid out the State Council’s comprehensive plan to improve the protection and management of intellectual property rights in China.⁴³ Paragraph 7 specifically emphasized the need for active development of “*zizhu zhishi chanquan*,”⁴⁴ which is translated herein as “independent intellectual property.” As the Paragraph stated:

The level of the self-relied intellectual property will be higher by a large margin and the quantity of intellectual property will be greater. China will rank among the advanced countries of the world in terms of the annual number of patents for inventions granted to the domestic applicants, while the number of overseas patent applications filed by Chinese applicants should greatly increase. A number of world-famous brands will emerge. The proportion of the GDP accounted for by the value of core copyright industries will greatly increase. China should own the rights to a number of high-quality new varieties of plants and high-level layout-designs of integrated circuits. Trade secrets, geographical indications, genetic resources, traditional knowledge as well as folklores will be effectively protected and reasonably utilized.⁴⁵

Paragraph 7 further identified three other goals for 2008–2013:

— The benefits of utilizing . . . IPRs . . . will be increased significantly and the proportion of products rich in IPRs should grow significantly. Enterprises should make progress in improving their system for managing intellectual property, invest more in the area of intellectual property and significantly improve their capacity to utilize intellectual property in market competition. A number of preponderant enterprises with famous brands, core intellectual property and rich experience in utilizing the intellectual property system will emerge.

— The protection of IPRs will be significantly improved. Infringement of IPRs, such as piracy and counterfeiting, should be significantly reduced, the expense of protecting intellectual property right will decrease a great deal and abuse of intellectual property should be effectively curbed.

— The awareness of the IPRs in society, especially among market entities, will be greatly enhanced and a favorable intellectual property culture should be basically formed.⁴⁶

Launched shortly before the adoption of the Third Amendment to

⁴² NATIONAL PATENT DEVELOPMENT STRATEGY, *supra* note 9, pmb1.

⁴³ STATE COUNCIL, OUTLINE OF THE NATIONAL INTELLECTUAL PROPERTY STRATEGY (2008), translated at http://english.gov.cn/2008-06/21/content_1023471.htm [hereinafter NATIONAL INTELLECTUAL PROPERTY STRATEGY].

⁴⁴ *Id.* ¶ 7.

⁴⁵ *Id.*

⁴⁶ *Id.*

the Chinese Patent Law,⁴⁷ the State Council's National Intellectual Property Strategy dovetailed the growing recognition by the fourth-generation Chinese leadership of the economic and strategic importance of a well-functioning intellectual property system. As President Hu Jintao remarked in the Group Study of the Political Bureau of the Central Committee of the Chinese Communist Party in May 2006:

Strengthening the building of China's system of intellectual property right and vigorously upgrading the capacity of creation, management, protection and application regarding intellectual property are our urgent need for the purpose of enhancing independent and self-driven innovation capabilities and building an innovation-oriented country.⁴⁸

Likewise, Premier Wen Jiabo observed: "One thing necessary to stress is the need to concretely strengthen IP protection. In the new era, global science and technology competition, as well as economic competition, is primarily a competition of IP rights. Promoting IP protection therefore promotes and inspires innovation."⁴⁹

At a much broader economic level, both the State Council's National Intellectual Property Strategy and SIPO's National Patent Development Strategy tied well to a growing array of nationwide initiatives launched to promote independent innovation (*zizhu chuangxin*).⁵⁰ Such promotion indeed has been designated as one of the four guiding principles in the Outline of the National Medium- and Long-Term Plan for Science and Technology Development (2006–2020).⁵¹ Published in February 2006, this fifteen-year plan formally

⁴⁷ See generally Peter K. Yu, *Building the Ladder: Three Decades of Development of the Chinese Patent System*, in GLOBAL PERSPECTIVES ON PATENT LAW (Margo Bagley & Ruth Okediji eds., forthcoming 2013) [hereinafter Yu, *Building the Ladder*] (discussing the Third Amendment to the Chinese Patent Law).

⁴⁸ Wu Handong, *One Hundred Years of Progress: The Development of the Intellectual Property System in China*, 1 WIPO J. 117, 120 (2009); see also PANG LAIKWAN, CREATIVITY AND ITS DISCONTENTS: CHINA'S CREATIVE INDUSTRIES AND INTELLECTUAL PROPERTY RIGHTS OFFENSES 8 (2012) ("If *gaige kaifang* (reform and open) was the dominant policy principle of the PRC government in the 1980s and 1990s, the recent Hu Jintao government has shifted its attention to *gaige chuangxin* (reform and innovation), emphasizing the importance of innovation and production of the new." (Chinese characters omitted)); Yu, *From Pirates to Partners I*, *supra* note 1, at 189–96 (discussing the need to convince Chinese leaders of the benefits of intellectual property protection).

⁴⁹ SIPO, *China's Intellectual Property Protection in 2008*, http://english.sipo.gov.cn/laws/whitepapers/200904/t20090427_457167.html (last visited Aug. 11, 2012).

⁵⁰ See PRUD'HOMME, *supra* note 14, at 75–115 (discussing some of these initiatives). For discussions of China's indigenous innovation policy, see generally An Siyuan & Brian Peck, *China's Indigenous Innovation Policy in the Context of Its WTO Obligations and Commitments*, 42 GEO. J. INT'L L. 375 (2011); Daniel Chow, *China's Indigenous Innovation Policies and the World Trade Organization*, 45 ARIZ. ST. L.J. (forthcoming 2013); Yu, *The TRIPS Enforcement Dispute*, *supra* note 4, at 1122–24.

⁵¹ STATE COUNCIL, THE OUTLINE OF THE NATIONAL MEDIUM- AND LONG-TERM PLAN FOR SCIENCE AND TECHNOLOGY DEVELOPMENT (2006–2020) § II(1) (2006) [hereinafter NATIONAL MEDIUM- AND LONG-TERM PLAN], available at <http://www.gov.cn/jrzg/2006->

declared the State Council's commitment to turn China into an innovation-based economy by 2020. As the Plan defined, "[i]ndigenous [or independent] innovation refers to enhancing original innovation, integrated innovation, and re-innovation based on assimilation and absorption of imported technology, in order improve our national innovation capability."⁵²

Although the goals behind policies introduced to promote independent innovation have been vague and unclear at times, they quickly attracted criticisms from U.S. rights holders and their supportive government.⁵³ As the USTR noted in the 2010 *National Trade Estimate Report on Foreign Trade Barriers*:

A troubling trend that has emerged . . . is China's willingness to encourage domestic or "indigenous" innovation at the cost of foreign innovation and technologies. For example, . . . in November 2009, China issued the Circular on Launching the 2009 National Indigenous Innovation Product Accreditation Work with the aim of improving "indigenous" innovation in computer and other technology equipment. In order to qualify as "indigenous" innovation under the accreditation system, and therefore be entitled to procurement preferences, a product's intellectual property must originally be registered in China.⁵⁴

Notwithstanding the concerns registered by U.S. rights holders and their supportive government, indigenous innovation policies have *both* benefits and drawbacks. As I testified before the ITC in June 2010, such policies can be beneficial when they help encourage the development of local stakeholders.⁵⁵ For more than a decade, industries and

02/09/content_183787.htm and translated at <http://www.etiea.cn/data/attachment/123%286%29.pdf>. For discussions of this fifteen-year plan, see generally Cao Cong, Richard P. Suttmeier & Denis Fred Simon, *China's 15-year Science and Technology Plan*, PHYSICS TODAY, Dec. 2006, at 38; Feng Xiaoqing, *The Interaction Between Enhancing the Capacity for Independent Innovation and Patent Protection: A Perspective on the Third Amendment to the Patent Law of the P.R. China*, 9 PITT. J. TECH. L. & POL'Y 1, ¶ 7 (2008); Liang, *supra* note 17, at 483–84. The other three principles are "leapfrogging in priority fields, enabling development, and leading the future." NATIONAL MEDIUM- AND LONG-TERM PLAN, *supra*, § II(1).

⁵² NATIONAL MEDIUM- AND LONG-TERM PLAN, *supra* note 51, § II(1).

⁵³ For criticisms of China's independent innovation policies, see generally ROBERT D. ATKINSON, ENOUGH IS ENOUGH: CONFRONTING CHINESE INNOVATION MERCANTILISM (2012), available at <http://www2.itif.org/2012-enough-enough-chinese-mercantilism.pdf>; JAMES MCGREGOR, CHINA'S DRIVE FOR "INDIGENOUS INNOVATION" A WEB OF INDUSTRIAL POLICIES (2010), available at http://www.uschamber.com/sites/default/files/reports/100728chinareport_0.pdf. See also *Assessing China's Efforts to Become an "Innovation Society"—A Progress Report: Hearing Before the U.S.-China Econ. & Security Review Comm'n*, 112th Cong. (2012), available at http://www.uscc.gov/hearings/2012hearings/written_testimonies/hr12_05_10.php [hereinafter *USCC Hearing*].

⁵⁴ U.S. TRADE REP., 2010 NATIONAL TRADE ESTIMATE REPORT ON FOREIGN TRADE BARRIERS 69 (2010).

⁵⁵ See U.S. INT'L TRADE COMM'N, INV. NO. 322-514, USITC PUB. NO. 4199, CHINA: INTELLECTUAL PROPERTY INFRINGEMENT, INDIGENOUS INNOVATION POLICIES, AND FRAMEWORKS FOR MEASURING THE EFFECTS ON THE U.S. ECONOMY, at D-20 (2010), available

commentators, myself included, have argued for the need to develop a critical mass of local stakeholders to help push for stronger intellectual property protection from the inside.⁵⁶ It is therefore highly encouraging that many Chinese leaders and nationals now finally realize the importance and benefits of indigenous innovation. The more local innovation there is, the more likely Chinese policymakers and the public at large will support greater intellectual property reforms in the future.

Nevertheless, indigenous innovation policies can be harmful if they discriminate against foreign firms. Such discriminatory policies easily bring to mind bad experiences foreign policymakers and industries encountered in the past. These experiences included the self-reliance and import substitution policies practiced during the Mao era⁵⁷ and the dreaded *Foreign Investment Industrial Guidance Catalogue* introduced in the mid-1990s. As noted China scholar Stanley Lubman recounted:

In June 1995, the State Planning Commission issued investment guidelines in a “Foreign Investment Industrial Guidance Catalogue” that classified projects as “encouraged,” “permitted,” “restricted” and “discouraged.” (Other internal guidelines also existed, which limited the market share that foreign firms could have in certain industries.) Then, in January, 1998, new guidelines were issued. The category of “encouraged” investments displayed a heightened emphasis on advanced technology; some types of projects now faced the additional requirement of high output capacities; others were moved to the “restricted” category, while controls were increased in some areas were already in that category. Subsequent revisions of the Catalogue have seemed to reflect movement in China’s national policy toward FDI and selective encouragement, rather than emphasizing tight control over foreign presences in the economy. This suggests that investors whose projects fall within the “encouraged” or “permitted” categories ought to find the approval process fairly routine, while those who wish to apply for investments

at <http://www.usitc.gov/publications/332/pub4199.pdf> (summarizing the Author’s testimony).

⁵⁶ See, e.g., AM. CHAMBER OF COMMERCE—CHINA, AMERICAN BUSINESS IN CHINA 42 (2006), available at <http://www.amcham-china.org.cn/amcham/upload/wysiwyg/20060516094503.pdf> (recommending that the “successful realization of [China’s] innovation priorities is the upside inducement for the Chinese to implement the fundamental reforms necessary to guarantee protection of IPR”); *Intellectual Property Rights Issues and Imported Counterfeit Goods: Hearing Before the U.S.-China Econ. and Security Comm’n*, 109th Cong. 257 (2006) (statement of Timothy Trainer, President, Global Intellectual Property Strategy Center) (noting the need “to address the true local interested parties, the local entrepreneurs and how they can be commercially and economically empowered to benefit from IP”); Peter K. Yu, *The Copyright Divide*, 25 CARDOZO L. REV. 331, 431–33 (2003) (discussing the need to create local stakeholders in the intellectual property system); Yu, *From Pirates to Partners II*, *supra* note 1, at 958–59 (providing an example to illustrate the benefits of developing local stakeholders in the intellectual property system).

⁵⁷ See Cao et al., *supra* note 51, at 40 (“In its ambiguity[,] *zizhu chuangxin* . . . has been construed by some as a regression to the self-defeating techno-nationalist notions of self-reliance (*zili gengsheng*) from the Maoist period, during which Chinese research and innovation were largely cut off from the international community and consequently were significantly retarded.”).

in the “restricted” category will encounter greater difficulty. More recent adjustments, however, have also closed some areas or shifted them out of the “encouraged” category.⁵⁸

Thus, when these disturbing past experiences were taken into consideration, and when indigenous innovation policies were linked to the large and fast-growing Chinese government procurement market,⁵⁹ U.S. policymakers and industries understandably feared the deleterious effects of these new policies.⁶⁰ Ultimately, whether the policies are good or bad will depend on how they are structured—for example, whether they discriminate against foreign firms. If the policies are discriminatory, they not only will endanger foreign industries, but will also threaten to violate China’s commitments under the WTO or other international agreements.⁶¹

To be certain, most foreign industries, policymakers, and commentators would hope that local policymakers in China could develop a right mix of policies that promote only good indigenous innovation. In reality, however, it is very rare for policymakers to get their policies completely right from the get-go without any trial and error. This is particularly true when policymakers are only beginning to understand the importance and benefits of indigenous innovation—for example, what it means to have indigenous innovation and how they can bring forth more of such innovation?

Thus, foreign policymakers and industries should avoid having knee-jerk resistance to China’s indigenous innovation policies—even when flaws emerge. It is also important to carefully separate good indigenous innovation policies that do not benefit foreign firms from bad indigenous innovation policies that intentionally discriminate against those firms. After all, from the standpoint of intellectual property reform, it is urgent that Chinese leaders and the public at large better understand the importance and benefits of indigenous innovation. Such understanding is likely to provide long-term benefits for foreign firms and intellectual property rights holders.

While the adoption of indigenous innovation policies has already sparked many interesting, and at times intense, debates, the emphasis on “*zizhu zhishi chanquan*” in the State Council’s National Intellectual

⁵⁸ Stanley Lubman, *Looking for Law in China*, 20 COLUM. J. ASIAN L. 1, 19 (2006) (footnote omitted).

⁵⁹ See U.S. Dep’t of Commerce, *Fact Sheet: 23rd U.S.-China Joint Commission on Commerce and Trade*, available at <http://www.commerce.gov/news/fact-sheets/2012/12/19/fact-sheet-23rd-us-china-joint-commission-commerce-and-trade> (last updated Dec. 19, 2012) (“China reported that in 2011 government procurement was \$179 billion. . . . China’s government procurement has been growing at 25 percent per year over the past seven years.”).

⁶⁰ See An & Peck, *supra* note 50, at 442 (“The primary reason why China’s indigenous innovation measures are drawing so much attention is basically an economic one—China’s government procurement market is one of the largest in the world, and the indigenous innovation measures may result in restricting or even closing this market to foreign companies.”).

⁶¹ See Yu, *The TRIPS Enforcement Dispute*, *supra* note 4, at 1123.

Property Strategy has raised a different set of questions.⁶² To begin with, the term “*zizhu zhishi chanquan*” does not directly translate to “indigenous intellectual property.” In fact, finding the right translation for this term has been particularly challenging; such a task is challenging for not only foreign policymakers and industry representatives, but also seasoned analysts who have closely followed China’s intellectual property developments—domestic and foreign alike.

As with many other Chinese terms, the term “*zizhu zhishi chanquan*” does not translate well from Chinese to English. While “*zhi*” can be easily translated to “self,” “*zhu*” is much more complicated. As a noun, the word refers to “master,” “owner,” or “host.” As a verb, the word refers to “direct” or “manage.” As an adjective, the word refers to “chief” or “main.” Thus, policymakers, commentators, and the media have translated “*zizhu*” to “self-relied,” “self-driven,” “self-controlled,” “self-owned,” “indigenous,” “homegrown,” or “independent.”⁶³ Out of all the terms, the word “independent” seems to best capture the term’s original meaning while preserving its useful Western connotations.

In his highly critical report on the Chinese patent system, Dan Prud’homme traced the origin of the term “*zizhu zhishi chanquan*” to the automotive policies in the mid-1990s:

Consultations suggest that the term originated in the mid-1990s [when] it was used in policy advice to build domestic IPR in the Chinese automobile industry. At the turn of the new millennium, the term was used in important policy guidance, which is still in effect, from state leader Jiang Zemin at an April 2nd 2000 conference on the Exhibition on China’s Fifteen-Year Achievements in Patent Work.

There is solid evidence . . . that the term typically means IP ownership, including acquired ownership, by a Chinese entity, which in some cases expressly is said to exclude entities with a majority foreign ownership.⁶⁴

When this origin is taken into account, the term “*zizhu*” intellectual property certainly covers more than “indigenous” or “homegrown” intellectual property. Although the term “independent intellectual property” does not provide a direct translation, it accurately reflects that “*zizhu*” intellectual property can be developed or acquired from abroad or involve China-based entities with minority foreign ownership.⁶⁵ The key to identifying certain intellectual property as “*zizhu*” is whether

⁶² See NATIONAL INTELLECTUAL PROPERTY STRATEGY, *supra* note 43, ¶ 7.

⁶³ See, e.g., *id.*; PRUD’HOMME, *supra* note 14, at 79; Wu, *supra* note 48, at 121; Yu, *Middle Kingdom*, *supra* note 1, at 247.

⁶⁴ PRUD’HOMME, *supra* note 14, at 79 (footnotes omitted).

⁶⁵ See *id.* at 82 (“[C]onsultations with two Chinese lawyers and an ex-government official based in China . . . confirm the term in practice is meant to refer to IPR on core technology owned by a Chinese entity that in no way is reliant on a foreign entity/influence.”).

such an asset is independently controlled by Chinese individuals, firms, or the government. Understanding such a key feature not only helps us better appreciate the goals behind the State Council's National Intellectual Property Strategy, but also raises important questions about whether the present discussion about China's indigenous innovation policies has been under-inclusive and somewhat wrong-headed.

Moreover, if achieving economic and technological independence is a key goal behind the State Council's adoption of the National Intellectual Property Strategy,⁶⁶ one cannot ignore the link of this key goal to the developing countries' ongoing frustration with the existing international intellectual property regime. Since the adoption of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement),⁶⁷ these countries repeatedly registered their concerns and disappointments over the inappropriately high standards of protection and enforcement of intellectual property rights.⁶⁸ In the past decade, these concerns and disappointments were further exacerbated by the developed countries' active push for the establishment of bilateral, plurilateral, and regional trade, investment, and intellectual property agreements.⁶⁹

To be certain, China's interests are somewhat different from those of many developing countries. Technically, China is what I have

⁶⁶ As the State Council declared in the National Intellectual Property Strategy, "Implementing the national intellectual property strategy to greatly promote China's capacity in creation, utilization, protection and administration of intellectual property will help improve China's capacity for independent innovation and aid in efforts to make China an innovative country." NATIONAL MEDIUM- AND LONG-TERM PLAN, *supra* note 51, § II(1). In the context of "independent innovation," the State Council further stated in the National Medium- and Long-Term Plan:

[O]ne should be clearly aware that importation of technology without emphasizing assimilation, absorption, and re-innovation is bound to weaken the nation's indigenous R&D capability, which in turn widens the gap with world advanced levels. Facts have proved that, in areas critical to the national economy and security, core technologies cannot be purchased. If our country wants to take the initiative in the fierce international competition, it has to enhance its indigenous innovation capability, master core technologies in some critical areas, own proprietary intellectual property rights, and build a number of internationally competitive enterprises. In a word, the improvement of indigenous innovation capability must be made a national strategy that is implemented in all sectors, industries, and regions so as to drastically enhance the nation's competitiveness.

Id.

⁶⁷ Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 108 Stat. 4809, 1869 U.N.T.S. 299.

⁶⁸ See Peter K. Yu, *TRIPS and Its Discontents*, 10 MARQ. INTELL. PROP. L. REV. 369, 379–86 (2006) (discussing the developing countries' discontent with the TRIPS-based international intellectual property system).

⁶⁹ For the Author's earlier criticisms of these nonmultilateral agreements, see generally Peter K. Yu, *ACTA and Its Complex Politics*, 3 WIPO J. 1, 9–12 (2011); Peter K. Yu, *Currents and Crosscurrents in the International Intellectual Property Regime*, 38 LOY. L.A. L. REV. 323, 392–400 (2004); Peter K. Yu, *Sinic Trade Agreements*, 44 U.C. DAVIS L. REV. 953, 961–86 (2011).

described as a “middle intellectual property power”; it possesses a large and fast-growing aggregate economy and high technological and innovative capabilities.⁷⁰ As a result, it does obtain benefits from the existing international intellectual property system despite its continuous criticism of that system. Nevertheless, China still aligns more closely with the developing world than with the developed world, due in large part to the country’s continuous struggle with internal problems, uneven regional, sectoral, and technological developments, limited resources on a per capita basis, and other reasons unrelated to intellectual property protection and enforcement (such as the importance of retaining leadership in the developing world).⁷¹ In fact, China remains reluctant to increase intellectual property protection for pharmaceuticals, chemicals, fertilizers, seeds, and foodstuffs, notwithstanding its already fast-growing industries in entertainment, software, semiconductors, and selected areas of biotechnology.⁷²

In sum, it remains unclear what international intellectual property system China will ultimately prefer. If the Chinese patent system continues to develop, there is a very good chance that China may prefer a system that better aligns with its historical traditions, cultural backgrounds, socio-economic conditions, ideological values, and policy preferences. As I observed in the inaugural issue of *The WIPO Journal*:

Although intellectual property protections in [emerging countries such as Brazil, China, and India] will no doubt improve in the near future, there is no guarantee that these countries will be interested in retaining the existing intellectual property system once they cross over to the other side of the intellectual property divide. Instead, these “new champions” may want to develop something different—something that builds upon their historical traditions and cultural backgrounds and that takes account of their drastically different socio-economic conditions.⁷³

Thus, how China develops its independent innovation policies, or independent intellectual property, is likely to have a significant impact on the future development of the international intellectual property system.

⁷⁰ See generally Peter K. Yu, *The Middle Intellectual Property Powers*, in *LAW AND DEVELOPMENT IN MIDDLE-INCOME COUNTRIES* (Tom Ginsburg & Randall Peerenboom eds., forthcoming 2013) (discussing the emergence of “middle intellectual property powers”).

⁷¹ See Peter K. Yu, *International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia*, 2007 MICH. ST. L. REV. 1, 21–32 [hereinafter Yu, *Regime Complex*]; Yu, *Middle Kingdom*, *supra* note 1, at 229–30, 234.

⁷² See Yu, *Regime Complex*, *supra* note 71, at 25–26.

⁷³ Peter K. Yu, *The Global Intellectual Property Order and Its Undetermined Future*, 1 WIPO J. 1, 13 (2009) [hereinafter Yu, *Global Intellectual Property Order*].

III. QUESTION 3: IS THERE A GRAND STRATEGY BEHIND CHINA'S RECENT PUSH FOR PATENT DEVELOPMENTS?

When one closely studies the State Council's National Intellectual Property Strategy, SIPO's National Patent Development Strategy, and other plans and measures introduced at the national, provincial, and municipal levels to implement these strategies, it is not hard to notice the careful planning and strategizing behind the Chinese government's effort. Equally blatant is China's eagerness to catch up with other developed countries—both economically and technologically. If one is willing to go beyond the intellectual property area, one could even include the State Council's National Medium- and Long-Term Plan for Science and Technology Development, which laid out China's current science and technology policy and sought to turn China into an innovation-based economy by 2020.

Taken together, these various strategies, plans, and measures may suggest China's success in devising a grand strategy to play economic and technological catch-up with developed countries. As Ikechi Mgbeoji noted in an interview with the *Financial Post*:

I'm amused when I listen to people who speak in a patronizing manner about China, as if the Chinese did not know what they're doing and suddenly they have now seen the light and have embraced the international patent system and so forth. . . . No, this was a deliberate policy of the Chinese state. It was a calculated and well planned thing. It wasn't as though they didn't understand the value of patents. . . . It was because they understood if they had very strong patent system at that stage in their development there will only be payment to foreign patent owners. So what they did was have a regime in place where they were free to copy, to steal ideas from other countries.⁷⁴

Professor Mgbeoji's assessment was both correct and incorrect. He was correct in pointing out that China has maintained a sustained effort to build up capacity to catch up with developed economies. Since the Deng Xiaoping-led second-generation leadership reopened the domestic market to foreign trade, catching up has been a major goal behind China's national policies.⁷⁵ Such catching-up was indeed necessary in the wake of the country's ill-advised import substitution policies (which made the country technologically backward) and the Cultural Revolution (which cost the country a decade of productivity,

⁷⁴ Jameson Berkow, *Patent Dragon Awakes*, FIN. POST, Nov. 7, 2011, <http://business.financialpost.com/2011/11/07/patent-dragon-awakes/> (quoting Ikechi Mgbeoji, Associate Professor, Osgoode Hall Law School, York University).

⁷⁵ See Peter K. Yu, *Piracy, Prejudice, and Perspectives: An Attempt to Use Shakespeare to Reconfigure the U.S.-China Intellectual Property Debate*, 19 B.U. INT'L. L.J. 1, 27–28 (2001) [hereinafter Yu, *Piracy, Prejudice, and Perspectives*].

training, and technological development).⁷⁶

In a forthcoming book chapter, I described how China built a patent ladder step-by-step in its effort to play economic and technological catch-up with developed countries.⁷⁷ To a large extent, China's experience illustrates well how the development of a well-functioning patent system can serve as an essential tool to foster economic development and technological proficiency. That experience is also not that different from the policies practiced by other once-developing countries. As William Kingston reminded us: "From the start of the industrial revolution, every country that became economically great began by copying: the Germans copied the British; the Americans copied the British and the Germans, and the Japanese copied everybody."⁷⁸ History is indeed filled with stories about how countries have successfully "crossed over" from the developing, copycat stage to the developed, innovative stage.⁷⁹ Interestingly, for our purposes, no country has ever become economically developed without also gaining more respect for intellectual property rights. Thus, if China's developments indeed follow this well-treaded path, in the near future it likely will join other once-developing countries in crossing over from a pirating nation to an intellectual property-respecting nation.⁸⁰

Nevertheless, Professor Mgbeoji was incorrect in overstating the grand strategy Chinese leaders were able to devise. Having a national goal of catching up with developed economies is very different from

⁷⁶ See Yu, *From Pirates to Partners I*, *supra* note 1, at 198; Yu, *Piracy, Prejudice, and Perspectives*, *supra* note 75, at 21–22.

⁷⁷ See Yu, *Building the Ladder*, *supra* note 47.

⁷⁸ William Kingston, *An Agenda for Radical Intellectual Property Reform*, in INTERNATIONAL PUBLIC GOODS AND TRANSFER OF TECHNOLOGY UNDER A GLOBALIZED INTELLECTUAL PROPERTY REGIME 653, 658 (Keith E. Maskus & Jerome H. Reichman eds., 2005).

⁷⁹ See Yu, *Rise and Decline*, *supra* note 6, at 533–43 (discussing the United States' crossover experience).

⁸⁰ See Yu, *China Puzzle*, *supra* note 1, at 175 ("[H]istory suggests that China is now simply following the economic development paths of Hong Kong, Japan, Singapore, South Korea, Taiwan—or even Germany and the United States. It is only a matter of time before China is converted from a pirating nation to a country that respects intellectual property rights."). Noted China scholar Kenneth Lieberthal concurred:

Every current advanced industrial economy went through a phase of development characterized by widespread theft of intellectual property. But over time in each such economy some domestic players developed their own intellectual property and became sufficiently powerful in the political system that they moved the system toward more effective IP protection. The question is whether a similar process is unfolding in China and whether it may take hold as Chinese producers move up the technology innovation ladder with government encouragement and support.

There are clear indicators that China's evolution is following the IP paths that others have trod.

having an intellectual property strategy that seeks to steal other intellectual property first before the country becomes developed enough to offer strong protection and to demand the same from its weaker trading partners.⁸¹ While a grand strategy—or, worse, a conspiracy theory—may be attractive to those who are frustrated by the slow progress China is making in enforcing intellectual property rights, that theory assumes too much of a developing country's ability—or, to be more accurate, the human ability—to strike the appropriate balance in the intellectual property system.⁸² It is not easy for countries to determine *ex ante* when they have to cross over from the pirating side of the intellectual property divide to the more promising side. Even in hindsight, it is rather hard to determine when a once-pirating nation such as the United States, Japan, South Korea, or Singapore transformed into a country respectful of intellectual property rights.

If anything, the evolution of the Chinese patent system has revealed the need for policymakers to take an incremental, pragmatic approach toward establishing a well-functioning patent system. Such development strongly resembles China's developments in non-intellectual property areas. The defining feature of the Chinese model—or what some commentators have described as the “Beijing Consensus”⁸³ or, more modestly, the “Beijing Proposal”⁸⁴—is not a definitive formula of success. Rather, it is the Chinese leaders' pragmatic approach in “groping for stones to cross the river”⁸⁵ (*mozhe shitou guohe*) and their willingness to consider a wide variety of options.⁸⁶ As Deng Xiaoping reminded Ghana President Jerry Rawlings

⁸¹ Cf. Berkow, *supra* note 74 (“China, experts argue, has intentionally maintained a lax intellectual property enforcement regime for decades, waiting until its internal invention industry had become strong enough to warrant something more robust.”).

⁸² Dan Breznitz made a similar observation in his testimony before the U.S.-China Economic and Security Review Commission:

I'm not sure that China as a state has this grand strategy where they actually understand everything that they're doing because the failures of the central government are unbelievable. But they have—(a) they have goals; (b) they have the will and the power to go and do something about those goals. They have extremely capable officials in the provincial and townships, which are doing everything in their power to make this system work, sometimes against the wishes of the central government, and we don't have that much.

USCC Hearing, supra note 53, at 42.

⁸³ See generally JOSHUA COOPER RAMO, *THE BEIJING CONSENSUS* 4 (2004) (advancing the concept of the Beijing Consensus); STEFAN A. HALPER, *THE BEIJING CONSENSUS: HOW CHINA'S AUTHORITARIAN MODEL WILL DOMINATE THE TWENTY-FIRST CENTURY* (2010) (discussing the Beijing Consensus).

⁸⁴ HU ANGANG, *CHINA IN 2020: A NEW TYPE OF SUPERPOWER* 17 (2011).

⁸⁵ Yu, *Sinic Trade Agreements, supra* note 69, at 1006.

⁸⁶ See WILLIAM H. OVERHOLT, *ASIA, AMERICA, AND THE TRANSFORMATION OF GEOPOLITICS* 118 (2007) (“Chinese leaders . . . do not accept Western democratic ideology, but they accept individual practices, such as village elections, because those practices have specific pragmatic value in reducing corruption. They want to discover and test these things themselves, step by step, rather than succumb to foreign ideological browbeating, but they are willing to

in 1985: “Please don’t try to copy our model. If there is any experience on our part, it is to formulate policies in light of one’s own national conditions.”⁸⁷ In the context of China’s increasing engagement in Africa, Deborah Brautigam also observed:

At the end of the day, we should remember this: China’s own experiments have raised hundreds of millions of Chinese out of poverty, largely without foreign aid. They believe in investment, trade, and technology as levers for development, and they are applying these same tools in their African engagement, not out of altruism but because of what they learned at home. . . . These lessons emphasize not aid, but experiments; not paternalism, but the “creative destruction” of competition and the green shoots of new opportunities.⁸⁸

In sum, while policymakers could certainly draw lessons and insights from the slow, but active development of the Chinese patent system, including the many “experiments” China conducted in the past three decades to turn the system around, such development does not provide a “grand strategy” or an easy prescription for other countries to catch up in the patent world. In fact, China’s development was filled with stories of trials and tribulations, of both successes and failures. These failures, along with the country’s rapidly-changing socio-economic conditions, were indeed why China had to completely revamp its patent system three times since the system was introduced in 1984.⁸⁹ To a large extent, China’s patent story is a story about “learning by legislating”—a story familiar to most developing countries.

Until recently, the Chinese intellectual property model has been rather unappealing, due in large part to the rampant piracy and counterfeiting problems within the country. In recent years, however, the country’s success in developing a world-class patent system has invited developing countries to take a much-needed second look. To some extent, the present discussion about the Chinese patent system has raised the same question found in other recent debates concerning China’s role in the international policy arena: Does Beijing now provide an attractive alternative model for other developing countries that are struggling in the present international economic system to catch up

consider *nearly everything*.” (emphasis added)).

⁸⁷ JUSTIN YIFU LIN, *THE QUEST FOR PROSPERITY: HOW DEVELOPING ECONOMIES CAN TAKE OFF* xvii (2012).

⁸⁸ DEBORAH BRAUTIGAM, *THE DRAGON’S GIFT: THE REAL STORY OF CHINA IN AFRICA* 311–12 (2010); see also Sebastian Heilmann, *Policy Experimentation in China’s Economic Rise*, 43 *STUD. COMP. INT’L DEV.* 1 (2008) (discussing experimentation-based policymaking in China).

⁸⁹ Since the introduction of a modern patent law in 1984, China undertook a major overhaul of the patent system in 1992, 2000, and 2008. See Yu, *Building the Ladder*, *supra* note 47. Although the system was revamped every eight years, “[t]hat each amendment should come every eight years is a total coincidence.” Guo He, *Patents*, in *CHINESE INTELLECTUAL PROPERTY AND TECHNOLOGY LAWS* 25, 29–30 (Rohan Kariyawasam ed., 2011).

economically and technologically?⁹⁰

IV. QUESTION 4: HAVE CHINESE SCHOOLS STARTED PLACING MORE EMPHASIS ON CREATIVITY AND INNOVATION?

In view of the recent developments concerning the Chinese patent system, one may begin to wonder what the major contributing factors are. After all, developments concerning innovation strongly parallel those concerning creativity. As Michael Keane observed in *Created in China* in the mid-2000s:

While scarcely a defining concern for most Western researchers and journalists, creativity has become a hot topic on the Mainland. Concepts such as creative nation, creative city and creative century are endorsed in policy statements within the 11th Five Year Plans of many Chinese cities. How did “creativity” come to China so suddenly? Why has it been embraced so enthusiastically?⁹¹

One question that I have often been asked in conferences or presentations concerns whether Chinese schools have now started to place more emphasis on creativity and innovation.⁹² This line of questioning is understandable for two reasons. First, and obviously, creativity and innovation go hand in hand with intellectual property developments. If Chinese inventors, all of a sudden, have been able to file many more patents, and if these filings were in fact not distorted by domestic policy adjustments (as some critics of the Chinese patent system have claimed),⁹³ it is fair to assume that China has started to provide either a more innovative environment or a much larger pool of creative and engineering talents. Because education is instrumental to cultivating such an environment or developing these needed talents, schools provide a logical starting point for any inquiry concerning China’s recent intellectual property developments.⁹⁴

⁹⁰ See Yu, *Sinic Trade Agreements*, *supra* note 69, at 1018–22 (exploring whether China would present an alternative model of economic development for other developing countries); *see also* RAMO, *supra* note 83, at 3 (“China is marking a path for other nations around the world who are trying to figure out not simply how to develop their countries, but also how to fit into the international order in a way that allows them to be truly independent, to protect their way of life and political choices in a world with a single massively powerful centre of gravity.”).

⁹¹ MICHAEL KEANE, *CREATED IN CHINA: THE GREAT NEW LEAP FORWARD 2* (2007).

⁹² For example, my fellow panelists and I were asked this particular question at the Conference on “China’s New Environment for Intellectual Property” at Fordham University School of Law on April 11, 2012.

⁹³ See discussion *supra* Part I.

⁹⁴ Cf. Keith E. Maskus, *The Role of Intellectual Property Rights in Encouraging Foreign Direct Investment and Technology Transfer*, 9 DUKE J. COMP. & INT’L L. 109, 143 (1998) (“[B]ecause labor skills are required for absorbing, using, and improving incoming technology . . . , educational competence, particularly in technical and managerial areas, is significant. Also important are professional support programs for technology transfer and technology diffusion.” (footnote omitted)); Yu, *Rise and Decline*, *supra* note 6, at 558–63 (noting

Second, the Chinese educational system—or what some commentators have derogatory described as “stuffed duck-style education”⁹⁵—has been widely criticized for its notorious emphasis on rote learning and memorization and discouragement of creativity and innovation.⁹⁶ Indeed, commentators have identified China’s educational and cultural environments as contributing factors to the country’s lack of creativity or of respect for intellectual property rights.⁹⁷ Some commentators even blamed Confucianism, or the larger Chinese culture, for the country’s massive piracy and counterfeiting problems.⁹⁸ Thus, if China has turned its patent system around, it might have found new ways to encourage the development of a more creative and innovative citizenry.

While the discussion of creativity and innovation in education is very important, and rote learning remains a heavily criticized aspect of

the important role education plays in promoting global competitiveness).

⁹⁵ E.g., JAMES MCGREGOR, *ONE BILLION CUSTOMERS: LESSONS FROM THE FRONT LINES OF DOING BUSINESS IN CHINA* 272 (2005).

⁹⁶ See Yu, *Piracy, Prejudice, and Perspectives*, *supra* note 75, at 18–19 (discussing the need for Chinese children in imperial China to memorize the *Classics* at a young age).

⁹⁷ As Tom Doctoroff lamented, in a somewhat stereotypical fashion:

Regression to the mean is everywhere: cookie-cutter television series, indistinct Canto- and Mando-pop musical fare; newspapers and magazines saturated with bland propaganda that neither provokes nor intrigues; rubber-stamped airport designs scarred, from Xiamen to Chengdu, by identical low-end building materials; cheaply produced household appliances sporting random bells and whistles; ubiquitous pirated mobile phones; dozens of sneaker brands adorned with clunky variations of Nike’s swoosh; a dynamic luxury scene that has never produced a Chinese label; undifferentiated, bombastic advertising that dulls the senses; a brandscape that thrives on scaled commoditization rather than differentiation.

China’s education system is partly to blame. Though meritocratic, it is stultifying, ultraconformist, and all about learning by rote. Americans compose original essays on “my summer vacation” or “my favorite book” almost as soon as they learn the alphabet. Students here do not ask questions in class, let alone challenge the teacher. At university, they are conditioned to “receive wisdom,” even in highly interpretive majors such as literature or mass communications. Class participation counts for nothing. When fresh graduates enter the workforce, their lips are sealed and their bosses go unchallenged. New ideas are suppressed and professional development is limited, leading to frustrated ambition and chronic job-hopping among young people.

DOCTOROFF, *supra* note 30, at 20–21. Likewise, Mark Liang noted:

Some observers go so far as to state that China’s culture discourages innovation, while others note that China’s education system encourages rote learning to the detriment of creative learning. And so the story goes that China has become brilliant at reproducing what’s already been done, but is utterly incapable of coming up with the next big thing.

Liang, *supra* note 17, at 481; see also JOHN KING FAIRBANK & MERLE GOLDMAN, *CHINA: A NEW HISTORY* 101 (1998) (“Having memorized vast sequences of the classics and histories, they constructed their own works by extensive cut-and-paste replication of phrases and passages from those sources.”); Yu, *Piracy, Prejudice, and Perspectives*, *supra* note 75, at 18 (“When the Chinese grew up, they were by training compilers, as compared to composers.”).

⁹⁸ See generally Peter K. Yu, *The Confucian Challenge to Intellectual Property Reforms*, 4 WIPO J. 1 (2012) (critically evaluating the challenge Confucianism has posed to intellectual property reforms in China and other parts of Asia).

Chinese education,⁹⁹ it is a non-starter to consider the Chinese uncreative and uninnovative. It is indeed hard to imagine how an uncreative and uninnovative people could come up with such pioneering innovations as compass, gunpowder, papermaking, and woodblock printing.¹⁰⁰ In his seminal book series, *Science and Civilisation in China*, Joseph Needham devoted his lifelong work to studying Chinese scientific developments, including many inventions that still benefit the world today.¹⁰¹ The important question China scholars ask is therefore not why the Chinese could not come up with world-class inventions, but why China had stopped doing so after a certain period of time?¹⁰²

Put in the intellectual property context, that question becomes: Why did China not offer stronger protection of intellectual property rights despite having led the world in innovation? Raising that question was indeed the approach taken by William Alford in his seminal work, *To Steal a Book Is an Elegant Offense*.¹⁰³ In the book's opening paragraph, he wrote: "Although scholars both East and West credit the Chinese with having contributed paper, movable type, and ink to humankind, China has yet to develop comprehensive protection for what is created when one applies inked type to paper."¹⁰⁴

Even today, it is not hard to find traces of creativity and innovation in products that most would condemn as infringing under international intellectual property standards. Examples of these products included unauthorized spinoffs of *Harry Potter* novels,¹⁰⁵ funny copycat logos such as "KFG," "OMcMcDonald's," and "Pizza Huh," and "shanzhai" smartphones that improved on the original products.¹⁰⁶ In all of these

⁹⁹ See Yu, *Piracy, Prejudice, and Perspectives*, *supra* note 75, at 18–19.

¹⁰⁰ For discussions of scientific developments in China, see generally BENJAMIN A. ELMAN, *ON THEIR OWN TERMS: SCIENCE IN CHINA, 1550–1900* (2005); JOSEPH NEEDHAM, *SCIENCE AND CIVILISATION IN CHINA* (1956–2004); ROBERT TEMPLE, *THE GENIUS OF CHINA: 3,000 YEARS OF SCIENCE, DISCOVERY, AND INVENTION* (2007).

¹⁰¹ NEEDHAM, *supra* note 100.

¹⁰² See, e.g., DOCTOROFF, *supra* note 30, at 19 (noting that "[h]istorians debate the roots of this stagnation"); MCGREGOR, *supra* note 53, at 10 ("China was once the center of global innovation with such inventions as the compass, gunpowder, paper and printing. So why is the country struggling to become innovative now?").

¹⁰³ WILLIAM P. ALFORD, *TO STEAL A BOOK IS AN ELEGANT OFFENSE: INTELLECTUAL PROPERTY LAW IN CHINESE CIVILIZATION* (1995).

¹⁰⁴ *Id.* at 1.

¹⁰⁵ See Yu, *From Pirates to Partners II*, *supra* note 1, at 976–84 (discussing these unauthorized spinoffs).

¹⁰⁶ "Originally, *shan zhai* was used to refer to a bandit stronghold outside government control [in imperial China]; today it is shorthand for a multitude of knockoffs, fakes, and pirated products. These include everything from mobile phones to medicine and movies to makeup, and they permeate China's consumer markets." EDWARD TSE, *THE CHINA STRATEGY: HARNESSING THE POWER OF THE WORLD'S FASTEST-GROWING ECONOMY* 79 (2010). For discussions of the *shanzhai* phenomenon in China, see generally YU HUA, *CHINA IN TEN WORDS* 181–202 (Allan H. Barr trans., 2012); William Hennessey, *Deconstructing Shanzhai—China's Copycat Counterculture: Catch Me If You Can*, 34 CAMPBELL L. REV. 609 (2012); Sun Haochen, *Can Louis Vuitton Dance with HiPhone? Rethinking the Idea of Social Justice in Intellectual Property Law*, 15 U. PA. J.L. & SOC. CHANGE 387 (2012); Yu, *Intellectual Property and Asian Values*,

examples of copycat products, what is problematic is not the lack of creativity and innovation in these products. Rather, it is the violation of intellectual property rights—or, in ethical terms, their engagement in unfair business or trade practices.

Thus, a critical question that one should ask more frequently is: Do the current international intellectual property standards provide appropriate proxies for measuring creativity and innovation? In the context of China's recent developments in the patent area, it is also worth exploring whether the type of creativity and innovation China possesses is the same as the type enshrined in the current international standards. Just because a product fails to satisfy the novelty, nonobviousness, and utility requirements pursuant to the existing patent standards does not necessarily mean that the product lacks any creativity and innovativeness. It only means that the product does not meet the strict threshold requirements set by these usually geopolitically influenced standards.

In the past few years, commentators documented the emergence of creative and innovative talents within China. For example, Michael Keane identified such creative clusters as “Beijing’s 798 Factory, Hangzhou’s Loft 49, Shanghai’s Tianzifang, and Chongqing’s Tank Loft.”¹⁰⁷ With regard to the semiconductor chip industry, Edward Luce of the *Financial Times* also observed, “Terms such as ‘innovate in China’ . . . are becoming commonplace at Intel and elsewhere.”¹⁰⁸ In fact, since the mid-1990s, Intel “has built five plants in China, all using the latest technologies. To tap into China’s distinctive technological developments, Intel Capital has invested in almost fifty companies in China and in 2005 it set up a \$200 million Intel Capital China Technology Fund to take shares in promising technologies emerging there.”¹⁰⁹ Motorola and LG have also made similar investments, building research and development (R&D) centers in China.¹¹⁰

supra note 23, at 390.

¹⁰⁷ KEANE, *supra* note 91, at 3.

¹⁰⁸ EDWARD LUCE, *TIME TO START THINKING: AMERICA IN THE AGE OF DESCENT* 158 (2012).

¹⁰⁹ ZENG MING & PETER J. WILLIAMSON, *DRAGONS AT YOUR DOOR: HOW CHINESE COST INNOVATION IS DISRUPTING GLOBAL COMPETITION* 181 (2007).

¹¹⁰ As Zeng Ming and Peter Williamson recounted:

[Since 1993], Motorola has built sixteen R&D centers with more than eighteen hundred people. In 1999, Motorola set up its China Research Institute in Beijing, which is among the largest facilities of its type in China, and also a world-class center within Motorola. Between 1985 and 2003, Motorola has applied for 2,305 patents, making it among the biggest patent applicants in China. . . .

Recognizing that it needs to leverage Chinese advantages at every stage of the value chain in order to strengthen its global competitiveness, Korea’s LG group has gone even further, moving key R&D to China. In 2005 LG hired two thousand engineers and scientists into its Chinese R&D center, making it LG’s largest R&D site outside Korea. LG has submitted more worldwide patent applications based on research conducted in China than any other company, with the exception for Huawei.

In addition, a growing number of commentators have started to appreciate the different forms of innovation that are slowly emerging in China. For instance, Zeng Ming and Peter Williamson discussed what they called “cost innovation.”¹¹¹ As they observed:

The new competition from China is . . . disruptive because it threatens to obsolete much of the established firms’ assets, capabilities, and experience base by changing the accepted rules of the game, undermining traditional profit models, and growing parts of the market that incumbents are poorly equipped to serve.¹¹²

By contrast, Tan Yinglan focused on “process innovation.”¹¹³ As he explained:

Most of China’s companies are in the stage of process innovation. Start-ups typically learn and adopt business models from other geographies and adapt them locally. Companies are trying to move into technological innovation via research and development by building on their existing knowledge, the way semiconductor firms are moving into thin film in 2010. Most Chinese firms are still using existing technology to create products, rather than creating the technology itself (as is done in the United States).¹¹⁴

Going further than Tan, Dan Breznitz and Michael Murphree pointed out that “China’s innovation capabilities are not solely in process (or incremental) innovation but also in the organization of production, manufacturing techniques and technologies, delivery, design, and second-generation innovation.”¹¹⁵

The emergence of this literature is important. Such literature not only helps us better understand how the Chinese patent system will be developed in the near future, but also raises the important, and somewhat sensitive, question about whether China’s emergence as a patent power would harm the interests of other major developed countries, including most notably the United States. In *Run of the Red Queen*, for example, Breznitz and Murphree reminded us that the Chinese model could complement the breakthrough innovation embraced by the United States and other developed countries.¹¹⁶ Using

By placing such emphasis on China-based R&D, LG is tapping into the secrets of how to deliver high technology at low cost to strengthen and differentiate its competitive position against rivals such as Sony, Matsushita, and its archrival Samsung.

Id. at 178.

¹¹¹ See generally ZENG & WILLIAMSON, *supra* note 109.

¹¹² *Id.* at 55–56.

¹¹³ TAN YINGLAN, CHINNOVATION: HOW CHINESE INNOVATORS ARE CHANGING THE WORLD xii (2011).

¹¹⁴ *Id.* at 268.

¹¹⁵ DAN BREZNITZ & MICHAEL MURPHREE, RUN OF THE RED QUEEN: GOVERNMENT, INNOVATION, GLOBALIZATION, AND ECONOMIC GROWTH IN CHINA 4 (2011).

¹¹⁶ See *id.* at 206 (“[T]hanks to the fragmentation of production, the rise of China need not be seen as a zero-sum game by policy makers inside and outside the country.”).

Apple iPod and iPhone as examples, the authors observed:

China needed Apple to develop the concept and definition of the iPod and the iPhone, but Apple cannot produce and sell these products without China. In the world of flexible mass production, the Red Queen country [referring to China or other countries with a similar innovation model] needs the novel-product innovators to keep churning out new ideas, and the novel-product-innovating countries need the Red Queen country to keep innovating on almost every aspect of production and delivery.¹¹⁷

Likewise, Zeng Ming and Peter Williamson wrote: “Far from being a zero-sum game . . . , the emergence of Chinese companies as significant players in the global market promises new benefits to the world’s consumers and new opportunities to those established companies that choose the right responses and execute them well.”¹¹⁸ Tan Yinglan further noted that the use by most Chinese firms of “existing technology to create products, rather than creating the technology itself[,] . . . makes China tech markets symbiotic and complementary with the U.S. market and those in some other countries.”¹¹⁹

In sum, if the type of innovation found in China is indeed somewhat different from the type commonly found in the United States or other parts of the world, one has to wonder whether it is oversimplified to inquire whether Chinese schools are now beginning to place more emphasis on creativity and innovation. While this line of questioning certainly ties well to an intellectual property–irrelevant debate about political freedom and democracy, it informs less about China’s future as a patent power. After all, there are different types of creativity and innovation.¹²⁰ If we want to know more about whether schools have placed more emphasis on creativity and innovation, we

¹¹⁷ *Id.* at 18.

¹¹⁸ ZENG & WILLIAMSON, *supra* note 109, at vii.

¹¹⁹ TAN, *supra* note 113, at 268.

¹²⁰ See NINA HACHIGIAN & MONA SUTPHEN, *THE NEXT AMERICAN CENTURY: HOW THE U.S. CAN THRIVE AS OTHER POWERS RISE* 117 (2010) (“Innovation can take many forms—new products (Post-it notes or diabetes drugs), production methods (just-in-time manufacturing), ways of doing business (big-box retailing), or even new industries (genomics). Innovation can also come from mundane improvements in the way a company does business. Small changes can beget great efficiencies, high productivity growth, and, ultimately, economic growth.”); Keith Pavitt, *Innovation Processes*, in *THE OXFORD HANDBOOK OF INNOVATION* 86, 87 (Jan Fagerberg, David C. Mowery & Richard R. Nelson eds., 2006) (“Innovation processes differ in many respects according to the economic sector, field of knowledge, type of innovation, historical period and country concerned. They also vary with the size of the firm, its corporate strategy or strategies, and its prior experience with innovation.”); see also HENRY KISSINGER, NIALL FERGUSON, DAVID DAOKUI LI & FAREED ZAKARIA, *DOES THE 21ST CENTURY BELONG TO CHINA?: THE MUNK DEBATE ON CHINA* 37 (Rudyard Griffiths & Patrick Luciani eds., 2011) (“With the invention of the sewing machine, Singer’s great skill was not coming up with the best machine. It was that he figured out that he could sell it to women on an instalment plan.” (quoting Fareed Zakaria, editor-at-large of *Time*)). See generally *THE OXFORD HANDBOOK OF INNOVATION*, *supra*, at 349–484 (collecting essays discussing variations in innovation processes).

also need to develop a better appreciation of the different types of creativity and innovation found across the world. Which type are we talking about: pathbreaking or breakthrough innovation *or* sequential or cumulative innovation?¹²¹ “First-to-world innovation,”¹²² “business model innovation,” or “innovations in supply chain management”?¹²³

V. QUESTION 5: WILL THE PROTECTION AND ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS IMPROVE IN CHINA IN THE NEAR FUTURE?

The recent significant increase in the number of patents applied for and granted in China may lead one to wonder whether the intellectual property landscape in China has undergone or will undergo a tectonic shift. Drawing on the history of intellectual property developments in Germany, the United States, Japan, and many other once-developing countries, one may also question whether China has finally reached that proverbial “crossover point”—the point where a country crosses over from a pirating nation to a nation respectful of intellectual property rights.¹²⁴ After all, the picture concerning China’s recent developments in the patent area is certainly different from the clichéd picture of pirates and counterfeiters policymakers, industries, commentators, and the media have painted painstakingly for more than a decade.

To be certain, the improvements found in China in the patent area are not isolated. One could also find similar developments in the trademark area. In a previous work, I noted how trademark protection fits well with the socio-political environment in China.¹²⁵ For example,

¹²¹ See Yu, *Intellectual Property and Asian Values*, *supra* note 23, at 389 & n.253 (noting the different approaches toward pathbreaking or breakthrough innovations and sequential or cumulative innovations); see also KEANE, *supra* note 91, at 152 (“The individual approach privileges basic research, discovery, breakthroughs and great insights. The rewards are Oscars, patents, international bestsellers and Nobel Prizes.”).

¹²² *USCC Hearing*, *supra* note 53, at 10 (reproducing the statement of Robert D. Atkinson, President, Information Technology and Innovation Foundation).

¹²³ *Id.* at 65 (reproducing the prepared statement of Richard P. Suttmeier, Professor of Political Science, Emeritus, University of Oregon); see also Jan Fagerberg, *Innovation: A Guide to the Literature*, in *THE OXFORD HANDBOOK OF INNOVATION*, *supra* note 120, at 1, 8 (“Introducing something in a new context often implies considerable adaptation (and, hence, incremental innovation) and, as history has shown, organizational changes (or innovations) that may significantly increase productivity and competitiveness.” (citation omitted)).

¹²⁴ See Yu, *Global Intellectual Property Order*, *supra* note 73, at 10–15 (discussing the existence of a “crossover point” where countries consider it to be in their self-interest to move from a pirating nation to one that strongly respects intellectual property rights); see also Richard P. Suttmeier & Yao Xiangkui, *China’s IP Transition: Rethinking Intellectual Property Rights in a Rising China* 6–7 (National Bureau of Asian Research, NBR Special Report No. 29, 2011) (“China is . . . poised for an IP transition. Yet whether this transition will lead to greater harmonization with international IP norms and practices, toward ‘destroying the IP regime’ . . . , or to some other departure from the given order remains unclear.”).

¹²⁵ See Yu, *From Pirates to Partners II*, *supra* note 1, at 995–98.

when compared with copyrights or patents, trademarks will create fewer obstacles to China's modernization efforts. As Peter Feng rightly observed, trademarks "were a state planning tool before they became a marketing device and private property."¹²⁶ By contrast, copyright protection could negatively impact a country's ability to maintain cultural and media control and its extensive propaganda efforts.¹²⁷ Patent protection could also slow down a country's efforts by draining foreign exchange reserves in the form of royalty and license fee payments.

It is therefore no surprise that the 1982 Trademark Law was the first intellectual property law to be enacted after China reopened its market to foreign trade in the late 1970s. (For comparison purposes, the Patent Law was not introduced until two years later, and the Copyright Law was adopted in 1990 following significant pressure from the USTR.¹²⁸) It is also worth noting that trademark registrations continued even during the Cultural Revolution, despite growing politicization of trademarks and the growing use among manufacturers of "politically correct" pseudonyms and non-identifying labels (such as "Red Flag" (*hongqi*), "East Wind" (*dongfeng*), and "Worker-Peasant-Soldier" (*gong nong bing*)).¹²⁹ In fact, had China not actively pushed for the development of the patent system through the State Council's National Intellectual Property Strategy and SIPO's National Patent Development Strategy, one may wonder whether trademark protection would have a much brighter future in China than both copyright and patent protections. With the adoption of these strategies, however, it is likely that the future of both trademark and patent protection will be much brighter than that of copyright protection.

If the compatibility between trademark protection and China's socio-political environment is not significant enough, the development of the Chinese trademark system has benefited significantly from the government's active push for the development of national champions and their well-known brands.¹³⁰ The development of the trademark system also goes hand in hand with the rapid emergence of the Chinese middle class, whose disposable income and purchasing power have

¹²⁶ FENG, *supra* note 24, at 344.

¹²⁷ See ANDREW MERTHA, THE POLITICS OF PIRACY: INTELLECTUAL PROPERTY IN CONTEMPORARY CHINA 133–34, 140 (2005); Yu, *Piracy, Prejudice, and Perspectives*, *supra* note 75, at 28–32.

¹²⁸ See Zhang Naigen, *Intellectual Property Law in China: Basic Policy and New Developments*, 4 ANN. SURV. INT'L & COMP. L. 1, 8 (1997).

¹²⁹ See FENG, *supra* note 24, at 293; MERTHA, *supra* note 127, at 197; Mark Sidel, *Copyright, Trademark and Patent Law in the People's Republic of China*, 21 TEX. INT'L L.J. 259, 272 (1986).

¹³⁰ See NATIONAL INTELLECTUAL PROPERTY STRATEGY, *supra* note 43, ¶ 7 (including as a strategic goal that "[a] number of world-famous brands will emerge"); see also Yu, *From Pirates to Partners II*, *supra* note 1, at 998 (pointing out that brand building fits with the government's strategy of consolidating industries to create national champions).

helped facilitate the development of a fast-growing luxury market. As early as 2005, Ernst & Young made the following forecast:

The Chinese luxury market . . . is expected to grow 20%, annually until 2008 and then 10% annually until 2015, when sales are expected to exceed US\$ 11.5 billion. By 2010, China is expected to have a quarter-billion consumers who can afford luxury products, nearly 17 times the present number. By 2015, Chinese consumers could be as influential as the Japanese and account for 29% of all global luxury goods purchases.¹³¹

Although this forecast was already quite impressive a few years ago, a new forecast showed that the Chinese middle class and luxury goods market had grown even more rapidly than many anticipated.¹³² As Bain & Company estimated in December 2011:

Luxury goods purchases in China and by Chinese consumers reached a total of 212 B RMB [over US\$30 billion] in 2010. Luxury purchases grew by 27 percent in Mainland China in 2010 and by 45 percent in Hong Kong and Macau, while Chinese luxury purchases abroad grew by 38 percent. When including Hong Kong and Macau spending, Greater China becomes the world's third largest luxury market, bypassing Italy and amounting to nearly 40% of the US luxury market.¹³³

In sum, intellectual property protection and enforcement is likely to greatly improve in both the patent and trademark areas. The same, however, may not be said of the copyright area. A major barrier to active development in this area is the continuously heavy control of content and information flows in both the offline and online worlds. In the audiovisual sector, for example, China continues to face significant content control.¹³⁴ Such tight control eventually led the United States to file a WTO complaint concerning China's denial of trading rights and market access for distribution services for publications, sound recordings, and audiovisual entertainment products.¹³⁵ Despite an aggressive defense by China and a subsequent appeal, both the WTO panel and the Appellate Body found for the United States on most

¹³¹ ERNST & YOUNG, CHINA: THE NEW LAP OF LUXURY 1 (2005).

¹³² BAIN & CO., *2011 China Luxury Market Study*, <http://www.bain.com/publications/articles/2011-china-luxury-market-study.aspx> (Dec. 15, 2011).

¹³³ *Id.*

¹³⁴ For discussions of censorship in Chinese cinema and the country's importation quota for foreign movies, see generally Mary Lynne Calkins, *Censorship in Chinese Cinema*, 21 HASTINGS COMM. & ENT. L.J. 239 (1999); Carl Erik Heiberg, Note, *American Films in China: An Analysis of China's Intellectual Property Record and Reconsideration of Cultural Trade Exceptions Amidst Rampant Piracy*, 15 MINN. J. INT'L L. 219 (2006).

¹³⁵ Request for Consultations by the United States, *China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/1 (Apr. 16, 2007).

counts.¹³⁶

Compared with the offline world, content control in the online environment in China is even more severe. Despite widely reported censorship in Russia, the Middle East, North Africa, and other parts of the world, China remains the poster child of internet censorship.¹³⁷ From time to time, mainstream media report the tightened censorship of internet-based media. Only a few months ago, mainstream media widely reported the new regulations the Standing Committee of the National People's Congress adopted to require the use of real identities in registering accounts with internet service providers.¹³⁸ Although those regulations could promote the protection of personal data, critics feared that the new requirements would result in tighter control over the use of blogs and other internet-based social media.¹³⁹

In *China in 2020*, noted Chinese economist Hu Angang described five capacities and indicators that can be used to evaluate a country's science and technology power.¹⁴⁰ The first, second, and fifth capacities are directly related to the development of the patent system—namely, “the country's innovative capacity in science” (measured by publications in internationally recognized science and technology journals), “innovative capacity as regards technology” (measured by domestic patent applications), and “the capacity of a country to invest in R&D” (measured by research and development expenditures).¹⁴¹ The third capacity, “the country's ability to use new technologies” (measured by the number of computer users), relates to not only the patent system, but also other intellectual property systems, most notably copyright.¹⁴²

Although all four of these capacities are pretty straightforward and uncontroversial, the fourth capacity, “the capacity of a country to use

¹³⁶ See Panel Report, *China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/R (Aug. 12, 2009); Appellate Body Report, *China—Measures Affecting Trading Rights and Distribution Services for Certain Publications and Audiovisual Entertainment Products*, WT/DS363/AB/R (Dec. 21, 2009). This outcome stands in sharp contrast to the more favorable outcome of the U.S.-China intellectual property enforcement dispute. Although the United States filed the intellectual property complaint on the same day as the complaint on trading and distribution rights, the panel report on the intellectual property dispute was evenly split between China and the United States. See WTO Panel Report, *supra* note 4; see also Yu, *The TRIPS Enforcement Dispute*, *supra* note 4; Yu, *TRIPS Enforcement and Developing Countries*, *supra* note 4.

¹³⁷ See, e.g., Hillary Rodham Clinton, U.S. Sec'y of State, Internet Freedom, Address Delivered at the Newseum in Washington, D.C. (Jan. 21, 2010), available at http://www.foreignpolicy.com/articles/2010/01/21/internet_freedom?page=full.

¹³⁸ See Keith Bradsher, *In Latest Crackdown, China Toughens Rules on Internet Users*, Dec. 29, 2012, N.Y. TIMES, at A4.

¹³⁹ See *id.*

¹⁴⁰ HU, *supra* note 84, at 96–99.

¹⁴¹ *Id.* at 98. See generally DENIS FRED SIMON & CAO CONG, CHINA'S EMERGING TECHNOLOGICAL EDGE: ASSESSING THE ROLE OF HIGH-END TALENT (2009) (discussing China's rapid development of technological capacity in recent years).

¹⁴² HU, *supra* note 84, at 98.

global information,” raises some challenging questions.¹⁴³ In Professor Hu’s view, that capacity is “measured by calculating the number of people that access the Internet.”¹⁴⁴ Because China now possesses the world’s largest internet population of more than 564 million,¹⁴⁵ it likely possesses the needed capacity. On close scrutiny, however, a country cannot have full capacity to use global information unless access to the internet would result in meaningful access to the needed global information.¹⁴⁶ Given the widespread control of internet content, one could question how successfully China meets this capacity.

In sum, while China may experience very promising developments in the patent and trademark areas, its developments in the copyright area may lag significantly behind. Whether the protection and enforcement of intellectual property rights will improve will depend ultimately on whether one focuses on the first two areas or the last one. The impressive developments we see in the patent area likely will not translate well to similar progress in the copyright area.

To complicate matters even further, the significant variations in these areas could raise an interesting question about what future foreign intellectual property policy the United States should adopt toward China. After all, a widening divide between patent and trademark protection on the one hand and copyright protection on the other could easily translate to a similar gap in the U.S.-China intellectual property debate—a gap between those U.S. industries driven by copyright protection (such as the movie and music industries) and those driven by patent and trademark protection (such as the pharmaceutical and luxury goods industries).¹⁴⁷

This widening gap is important, because external pressure—usually from the USTR—has been a major catalyst to China’s intellectual property reforms. Such pressure comes in handy when reformist leaders need an outside push to help reduce resistance from their conservative counterparts.¹⁴⁸ Thus, if the U.S.-China intellectual property debate is bifurcated along the lines of copyright versus patent and trademark, such bifurcation could result in significant variations in

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ CHINA INTERNET NETWORK INFORMATION CENTER, 31ST STATISTICAL SURVEY REPORT ON THE INTERNET DEVELOPMENT IN CHINA 4 (2013), available at <http://www1.cnnic.cn/IDR/ReportDownloads/201302/P020130312536825920279.pdf>.

¹⁴⁶ Cf. Peter K. Yu, *Bridging the Digital Divide: Equality in the Information Age*, 20 CARDOZO ARTS & ENT. L.J. 1, 13–14 (2002) (arguing that the term “digital divide” should be broadly defined to cover digital content and noting that “[w]ithout access to such content, . . . users would still be shut out of the digital revolution even if they have access to the Internet and new communications technologies”).

¹⁴⁷ Such a gap exists in other intellectual property debates. See Yu, *ACTA and Its Complex Politics*, *supra* note 69, at 13–15 (discussing the complex domestic politics implicated by the ACTA negotiations).

¹⁴⁸ See Peter K. Yu, *The Copyright Divide*, 25 CARDOZO L. REV. 331, 440 (2003).

the external pressure exerted on China in different areas of intellectual property law.¹⁴⁹ These variations in turn would create further variations in the improvements in each area.

Finally, while the divide between patent and trademark protection on the one hand and copyright protection on the other is significant, it is worth keeping in mind that China also struggles with wide regional, sectoral, and technological disparities.¹⁵⁰ Indeed, these disparities are so significant that I have described China as “a country of countries.”¹⁵¹ As I surmised in an earlier article:

Under this scenario, stronger intellectual property protection will appear in Beijing, Shanghai, Guangzhou, and other major cities and coastal regions. Meanwhile, the massive piracy and counterfeiting problems will stay in China, migrating from the country’s developed parts to its less developed parts. To strike a compromise between the different regional needs, interests, and development goals, Chinese leaders may take some rather “schizophrenic,” or pragmatic, positions in designing their intellectual property policies. The resulting regional conflicts and rivalries may also become major factors affecting the future development of intellectual property protection in China.¹⁵²

Given these disparities, and the much slower development of the Chinese copyright system, China is unlikely to simultaneously experience dramatic improvements in the protection and enforcement of intellectual property rights in all the major areas of intellectual property rights. Instead, the country’s improvements will vary according to time, region, sector, and the type of intellectual property right. If China is to cross over from a pirating nation to a nation respectful of intellectual property rights, it may experience several crossover points—depending on time, region, sector, and the type of intellectual property right.¹⁵³ Until China as a whole crosses over from the pirating side of the intellectual property divide to the more promising side, it likely will have to continue to make policy compromises that often result in “schizophrenic” positions in the international intellectual property

¹⁴⁹ See Yu, *From Pirates to Partners I*, *supra* note 1, at 138–40 (discussing the USTR’s Section 301 process).

¹⁵⁰ See Yu, *Regime Complex*, *supra* note 71, at 21–32.

¹⁵¹ Yu, *From Pirates to Partners II*, *supra* note 1, at 963; see also SHENKAR, *supra* note 30, at 134 (pointing out that “China’s enormous labor reserve, with pay scales radically lower in the hinterland than on the coast and in urban areas . . . , creates the equivalent of a country within a country”).

¹⁵² Peter K. Yu, *Three Questions that Will Make You Rethink the U.S.-China Intellectual Property Debate*, 7 J. MARSHALL REV. INTEL. PROP. L. 412, 423 (2008).

¹⁵³ See Yu, *Global Intellectual Property Order*, *supra* note 73, at 13–14 (“Because of their complex economic situations, these countries may also have more than one crossover point, depending on whether one focuses on a specific geographical region or the relevant economic sector.”).

arena.¹⁵⁴ It will indeed be no surprise if China is aligned with the developing world with respect to certain issues, but with the developed world with respect to others.

CONCLUSION

Looking back, it is hard not to be amazed by the turnaround China experienced in the intellectual property arena in the past few years. Although the country did not have a modern patent system until 1984, it is now on track to become the world's leader in both domestic and international patent applications. Taking account of these developments, it is not hard to reject as overly simplistic and outdated the picture of massive piracy and counterfeiting in China usually painted by policymakers, industries, commentators, and the media. It is also not difficult to deem as unwise the industries' continued push for greater enforcement, regardless of whether such enforcement could eventually backfire on these industries while benefiting their competitors—Chinese industries and rights holders.¹⁵⁵

Nonetheless, it is much harder to determine how the future of intellectual property protection and enforcement in China will hold. It is equally hard to determine whether the promising developments in the patent area, and to some extent the trademark area, would be extended to the copyright area. To help us better understand this future, this Article recalls five key questions that I have been repeatedly asked in presentations or conferences exploring recent intellectual property developments in China. While the answers reflect neither a rosy picture of China's "great leap forward" in the intellectual property arena nor a continuously gloomy picture of pirates and counterfeiters, the picture is complex, dualistic, and highly dynamic. It includes both yin and yang.

In the future, China is likely to see both the yin of continued massive piracy and counterfeiting and the yang of China's rise as an intellectual property power *at the same time*. Although internal contradictions are not uncommon in China,¹⁵⁶ especially when one takes into account the country's uneven regional, sectoral, and technological developments, this complex, dualistic, and highly dynamic picture suggests the possibility for a new phenomenon that the world has never

¹⁵⁴ See Yu, *Regime Complex*, *supra* note 71, at 25–26 (explaining why intellectual property developments in China should not be analyzed as if the country were homogeneous).

¹⁵⁵ See Yu, *Rise and Decline*, *supra* note 6, at 543–56 (discussing the unintended consequences of the industries' increasing push for greater intellectual property enforcement without taking into consideration China's rise as an intellectual property power).

¹⁵⁶ See John J. Hamre & C. Fred. Bergsten, *Preface* to C. FRED BERGSTEN, BATES GILL, NICHOLAS R. LARDY & DEREK J. MITCHELL, *CHINA: THE BALANCE SHEET: WHAT THE WORLD NEEDS TO KNOW NOW ABOUT THE EMERGING SUPERPOWER* ix (2006) (noting that China is "sometimes internally contradictory").

seen before. Its unprecedented nature certainly suggests our present need to better understand the recent intellectual property developments in China and to engage in a deeper assessment of the implications of these developments.